

We Claim

5 1. A capsule adapted for containing a dose of a therapeutic agent to be delivered within a pressurized fluid flow, said capsule comprising a first member and a second member, wherein said first and second members are coupled together to provide a closed pocket for containing the dose, and one of said first and second members is moveable relative to the other member when a portion of said capsule is contacted with a pressurized fluid flow such that a passage is formed through said capsule and said pocket is opened to expose the dose for entrainment in fluid flowing through said passage.

10 2. The capsule of claim 1, wherein the second member is a housing and the first member is a plug which is inserted into said housing.

15 20 3. The capsule of claim 2, wherein the plug and the housing contact each other at upper and lower opposing faces thereof, and the closed pocket is provided by an intermediate space established between said upper and lower opposing faces where said plug and housing do not contact each other.

25 30 4. The capsule of claim 2, wherein the plug and the housing contact each other at upper and lower opposing faces thereof, and further wherein the closed pocket is provided by a cavity or recess formed in the plug or housing, and said cavity or recess is positioned between said upper and lower opposing faces.

35 5. The capsule of claim 4, wherein the cavity or recess is annular.

6. The capsule of claim 4, wherein the cavity or recess is formed in the plug.

5 7. The capsule of claim 4, wherein the cavity or recess is formed in the housing.

8. The capsule of claim 2, wherein the plug is moveable within the housing when said capsule is contacted with a pressurized fluid flow.

9. The capsule of claim 2, wherein the housing is moveable from around the plug when said capsule is contacted with a pressurized fluid flow.

10. The capsule of claim 1, wherein the first and second members are respectively first and second halves of a vertically divided plug.

11. The capsule of claim 10, wherein the first and second halves of the plug contact each other at opposing faces thereof, and the closed pocket is provided by corresponding cavities disposed within said opposing faces.

12. The capsule of claim 1, wherein the first and second members are coupled together to form the closed pocket by a resilient coupling means.

30 *sub a3* 13. *as* The capsule of any one of claims 1-12, wherein said closed pocket is prefilled with the dose of the therapeutic agent and said first and second members and sealably coupled together.

35 14. A syringe for delivering a dose of a therapeutic agent within a pressurized fluid flow, said syringe comprising:

(a) an upstream portion which is interfaced with a source of fluid under pressure;

(b) a downstream nozzle portion;

(c) an intermediate portion arranged between the upstream and downstream portions, wherein said intermediate portion comprises first and second members which are coupled together to provide a closed pocket for containing the dose of the therapeutic agent, and further wherein one of said first and second members is moveable relative to the other member; and

(d) an actuator mechanism for initiating a flow of fluid from the source of fluid to the intermediate portion whereby pressure exerted by the fluid causes one of said first and second members to move relative to the other member such that a passage is formed through said intermediate portion and said pocket is opened to expose the dose for entrainment in fluid flowing through said passage and into the downstream nozzle portion.

15. The syringe of claim 14, wherein the first member of the intermediate portion comprises a tubular housing having an upstream opening and a downstream opening, the second member of the intermediate portion comprises a plunger having a lower end which is disposed within and closes off said downstream opening of said housing, and the closed pocket is provided by a space established between the lower end of the plunger and the inner surface of the downstream opening.

16. The syringe of claim 15, wherein the closed pocket is further provided by a cavity disposed within the lower end of the plunger.

5 17. The syringe of claim 15, wherein an upper end of the plunger extends toward the upstream portion of the syringe and is supported by a bar which is supported at both ends by the intermediate portion of the syringe and is initially deflected towards the upstream portion of the syringe.

10 18. The syringe of claim 17, wherein pressure exerted by the fluid causes the bar to travel through a dead-center position and deflect towards the downstream portion of the syringe, thereby causing the lower end of the plunger to dislodge from said downstream opening and move in a downstream direction relative to the housing to provide a passage through said intermediate portion of the syringe.

20 19. The syringe of claim 14, wherein the fluid is a compressible gas and the dose of the therapeutic agent is in particulate form.

25 20. The syringe of claim 14 further comprising means for providing resistance against initial movement of said first or second member relative to the other member.

30 21. The syringe of claim 14, wherein the intermediate portion of said syringe comprises the capsule of any one of claims 1-13.

35 22. The syringe of claim 21, wherein the fluid is a compressible gas and the dose of the therapeutic agent is in particulate form.

23. The syringe of claim 21 further comprising means for providing resistance against

initial movement of said first or second member
relative to the other member.

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